

METHODS AND APPARATUS FOR RETAINING A TRAY STACK  
HAVING A PLURALITY OF TRAYS FOR CARRYING  
MICROELECTRONIC DEVICES

ABSTRACT OF THE DISCLOSURE

Devices and methods for holding a tray stack having a plurality of trays configured to carry and store microelectronic devices. Several devices in accordance with the present invention are particularly applicable to carrying a stack of JEDEC trays that have been loaded with a plurality of microelectronic devices. In one embodiment, the device is a tray retainer including a guide structure configured to allow the tray stack to move in a direction of a load/unload path, and to restrict lateral movement of the tray stack with respect to the load/unload path. The guide structure can have a first end, a second end, and an opening at least proximate to the second end. The guide structure, for example, can have first and second channel sections extending in the direction of the load/unload path. The second channel section can also face the first channel section. The tray retainer can also include a cross-member and a moveable retaining element. The cross-member can extend transverse to the load/unload path at least partially across a first region of the guide structure between the first and second channel sections. The cross-member can be spaced apart from the opening toward the first end of the guide structure. The moveable retaining element is positioned at a second region of the guide structure spaced apart from the cross-member. The retaining element can move between a storage position in which it obstructs the load/unload path and a load/unload position in which it does not obstruct the load/unload path.